

## CHAPTER 60 NOMENCLATURE

### Topic 61 - Abbreviations

#### Index 61.1 - Official Names

AASHTO	American Association of State Highway and Transportation Officials
DOT	U.S. Department of Transportation
FHWA	Federal Highway Administration
Caltrans or Department	California Department of Transportation
CFR	Code of Federal Regulations
CTC or Commission	California Transportation Commission
DOD	Division of Design
District	Department of Transportation Districts
FAA	Federal Aviation Administration
PUC	Public Utilities Commission
PS&E	Plans, Specifications, and Estimate
STIP	State Transportation Improvement Program
DES	Division of Engineering Services
METS	Office of Materials Engineering and Testing Services
GS	Geotechnical Services
SD	Structure Design

### Topic 62 - Definitions

#### 62.1 Geometric Cross Section

##### (1) Lane.

- (a) Auxiliary Lane--The portion of the roadway for weaving, truck climbing, speed change, or for other purposes supplementary to through traffic movement.
- (b) Lane Numbering--On a multilane roadway, the traffic lanes available for through traffic traveling in the same direction are numbered from left to right when facing in the direction of traffic flow.
- (c) Multiple Lanes--Freeways and conventional highways are sometimes defined by the number of through traffic lanes in both directions. Thus an 8-lane freeway has 4 through traffic lanes in each direction.

Likewise, a 4-lane conventional highway has 2 through traffic lanes in each direction.

- (d) Median Lane--A speed change lane within the median to accommodate left turning vehicles.
  - (e) Separate Turning Lane--An auxiliary lane for traffic in one direction which has been physically separated from the intersection area by a traffic island.
  - (f) Speed Change Lane--An auxiliary lane, including tapered areas, primarily for the acceleration or deceleration of vehicles entering or leaving the through traffic lanes.
  - (g) Traffic Lane--The portion of the traveled way for the movement of a single line of vehicles.
- (2) *Maintenance Vehicle Pullout (MVP)*. Paved areas, or appropriate all weather surfaces, adjacent to the shoulder for field personnel to park off the traveled way and access the work site.
  - (3) *Median*. The portion of a divided highway separating the traveled ways for traffic in opposite directions.
  - (4) *Outer Separation*. The portion of an arterial highway between the traveled ways of a roadway for through traffic and a frontage street or road.
  - (5) *Roadbed*. That portion of the roadway extending from curb line to curb line or shoulder line to shoulder line. Divided highways are considered to have two roadbeds.
  - (6) *Roadside*. A general term denoting the area adjoining the outer edge of the roadbed to the right of way line. Extensive areas between the roadbeds of a divided highway may also be considered roadside.
  - (7) *Roadway*. That portion of the highway included between the outside lines of the sidewalks, or curbs and gutters, or side ditches including also the appertaining structures, and all slopes, ditches, channels, waterways, and other features necessary for proper drainage and protection.

- (8) *Shoulder.* The portion of the roadway contiguous with the traveled way for accommodations of stopped vehicles, for emergency use, and for lateral support of base and surface courses.
- (9) *Traveled Way.* The portion of the roadway for the movement of vehicles, exclusive of shoulders.

## 62.2 Highway Structures

- (1) *Illustration of Types of Structures.* Figure 62.2 illustrates the names given to common types of structures used in highway construction. This nomenclature must be used in all phases of planning.
- (2) *Bridges.* Structures that span more than 6.1 m, measured along the centerline of the road between undercopings of abutments, and multiple span structures, including culverts, where the total measurement of the individual spans are in excess of 6.1 m, measured from center to center of supports along the centerline of the road and the distance between individual culvert barrels is less than one-half the culvert diameter. Culverts that fit the definition of a bridge will be designed and maintained by the Division of Engineering Services - Structures Design and assigned a bridge number.
- (3) *Culverts.* See Index 806.2.

## 62.3 Highway Types

- (1) *Freeway.* A freeway, as defined by statute, is a highway in respect to which the owners of abutting lands have no right or easement of access to or from their abutting lands or in respect to which such owners have only limited or restricted right or easement of access. This statutory definition also includes expressways.

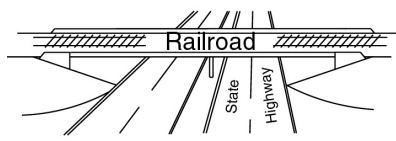
The engineering definitions for use in this manual are:

- (a) *Freeway*--A divided arterial highway with full control of access and with grade separations at intersections.
- (b) *Expressway*--An arterial highway with at least partial control of access, which may

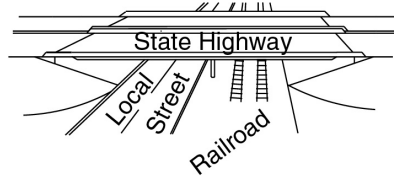
or may not be divided or have grade separations at intersections.

- (2) *Controlled Access Highway.* In situations where it has been determined advisable by the Director or the CTC, a facility may be designated a "controlled access highway" in lieu of the designation "freeway". All statutory provisions pertaining to freeways and expressways apply to controlled access highways.
- (3) *Conventional Highway.* A highway without control of access which may or may not be divided. Grade separations at intersections or access control may be used when justified at spot locations.
- (4) *Highway.*
  - (a) *Arterial Highway*--A general term denoting a highway primarily for through traffic usually on a continuous route.
  - (b) *Bypass*--An arterial highway that permits traffic to avoid part or all of an urban area.
  - (c) *Divided Highway*--A highway with separated roadbeds for traffic in opposing directions.
  - (d) *Major Street or Major Highway*--An arterial highway with intersections at grade and direct access to abutting property and on which geometric design and traffic control measures are used to expedite the safe movement of through traffic.
  - (e) *Radial Highway*--An arterial highway leading to or from an urban center.
  - (f) *Through Street or Through Highway*--Every highway or portion thereof at the entrance to which vehicular traffic from intersecting highways is regulated by stop signs or traffic control signals or is controlled when entering on a separate right-turn roadway by a "YIELD" sign.
- (5) *Parkway.* An arterial highway for non-commercial traffic, with full or partial control of access, and usually located within a park or a ribbon of park-like development.

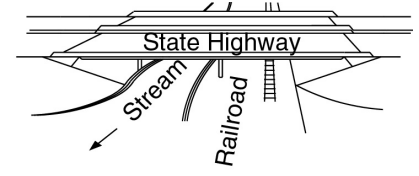
**Figure 62.2**  
**Types of Structures**



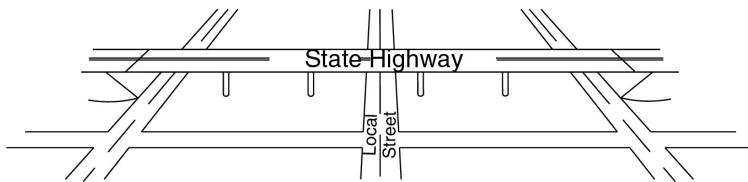
UNDERPASS



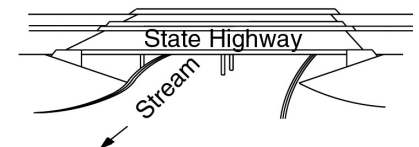
OVERHEAD



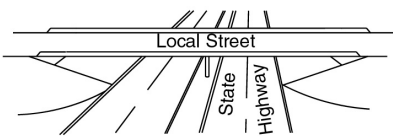
BRIDGE & OVERHEAD



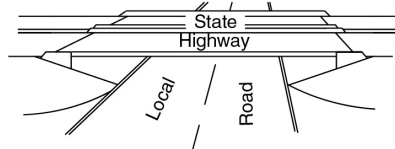
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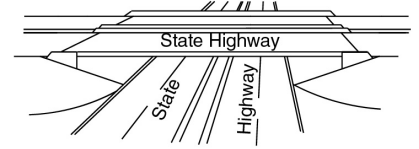
BRIDGE



OVERCROSSING



UNDERCROSSING



SEPARATION

- (6) *Scenic Highway.* A state or county highway, in total or in part, that is recognized for its scenic value, protected by a locally adopted corridor protection program, and has been officially designated by the Department.
- (7) *Street or Road.*
  - (a) Cul-de-Sac Street--A local street open at one end only, with special provisions for turning around.
  - (b) Dead End Street--A local street open at one end only, without special provisions for turning around.
  - (c) Frontage Street or Road--A local street or road auxiliary to and located on the side of an arterial highway for service to abutting property and adjacent areas and for control of access.
  - (d) Local Street or Local Road--A street or road primarily for access to residence, business, or other abutting property.
  - (e) Toll Road, Bridge or Tunnel--A highway, bridge, or tunnel open to traffic only upon payment of a direct toll or fee.

## 62.4 Interchanges and Intersections at Grade

- (1) *Channelization.* The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movement of both vehicles and pedestrians.
- (2) *Geometric Design.* Geometric design is the arrangement of the visible elements of a road, such as alignment, grades, sight distances, widths, slopes, etc.
- (3) *Gore.* The area immediately beyond the divergence of two roadbeds bounded by the edges of those roadbeds.
- (4) *Grade Separation.* A crossing of two highways or a highway and a railroad at different levels.
- (5) *Interchange.* A system of interconnecting roadways in conjunction with one or more grade separations providing for the inter-

change of traffic between two or more roadways on different levels.

### (6) *Interchange Elements.*

- (a) Branch Connection--A multilane connection between two freeways.
- (b) Freeway-to-freeway Connection--A single or multilane connection between freeways.
- (c) Ramp--A connecting roadway between a freeway or expressway and another highway, road, or roadside area.

(7) *Intersection.* The general area where two or more roadways join or cross, within which are included roadside facilities for traffic movements in that area.

(8) *Island.* A defined area between traffic lanes for control of vehicle movements or for pedestrian refuge. Within an intersection a median or an outer separation is considered an island.

(9) *Minimum Turning Radius.* The radius of the path of the outer front wheel of a vehicle making its sharpest turn.

(10) *Offset Left-Turn Lanes.* Left-turn lanes are shifted as far to the left as practical rather than aligning the left-turn lane exactly parallel with and adjacent to the through lane. Offset opposing left-turn lanes provide improved visibility of opposing through traffic when medians are wide.

(11) *Skew Angle.* The complement of the acute angle between two centerlines which cross.

(12) *Weaving Section.* A length of one-way roadway, designed to accommodate weaving, at one end of which two one-way roadways merge and at the other end of which they separate.

## 62.5 Landscape Architecture

(1) *Classified Landscaped Freeway.* A classified landscaped freeway is a planted section of freeway that meets the criteria established by the California Code of Regulations Outdoor Advertising Regulations, Title 4, Division 6. This designation is used in the control and regulation of outdoor advertising displays.

(2) *Highway Planting.* Highway planting addresses safety requirements, provides compliance with environmental commitments, and assists in the visual integration of the transportation facility within the existing natural and built environment. Highway planting provides planting to satisfy legal mandates, environmental mitigation requirements, Memoranda of Understanding or Agreement between the Department and local agencies for aesthetics or erosion control. Highway planting also includes roadside management strategies that improve traveler and worker safety by reducing the frequency and duration of maintenance worker exposure.

Highway planting required due to the impacts of a roadway construction project must be programmed and funded by the parent roadway project.

Highway planting, funded and maintained by the Department on conventional highways, is limited to planting that provides: safety improvements, erosion control/storm water pollution prevention, revegetation, and required mitigation planting. Highway planting on freeways, controlled access highways and expressways, funded and maintained by the Department, is limited to areas that meet specific criteria. See Chapter 29 "Landscape Architecture" of the Project Development Procedures Manual (PDPM) for more detailed information regarding warranted planting.

(3) *Highway Planting Restoration.* Highway planting restoration provides for replacement, restoration, and rehabilitation of existing vegetation damaged by weather, acts of nature or deterioration, to integrate the facility with

the adjacent community and surrounding environment. Highway planting restoration also provides erosion control to comply with National Pollutant Discharge Elimination System (NPDES) permit requirements. These projects include strategies designed to protect the safety of motorists and maintenance workers by minimizing recurrent maintenance activities.

(4) *Highway Planting Revegetation.* Highway planting revegetation provides planting as mitigation for native vegetation damaged or removed due to a roadway construction project. Highway planting revegetation may include irrigation systems as appropriate. Highway planting revegetation, required due to the impacts of a roadway construction project, must be programmed and funded by the parent roadway project.

(5) *Replacement Highway Planting.* Replacement highway planting replaces vegetation installed by the Department or others, that has been damaged or removed due to transportation project construction. Replacement highway planting may also include irrigation modifications and/or replacement. Replacement highway planting required due to the impacts of a roadway construction project must be programmed in conjunction with and funded from the parent roadway project.

(6) *Required Mitigation Planting.* Required mitigation planting provides planting and other work necessary to mitigate environmental impacts due to roadway construction. The word "required" indicates that the work is necessary to meet legally required environmental mitigation or permit requirements. Required mitigation planting may be performed within the operational right of way, immediately adjacent to the highway or at an offsite location as determined by the permit. A planting project for required mitigation due to the impacts of a roadway construction project must be programmed and funded by the parent roadway project.

(7) *Safety Roadside Rest Area System.* The safety roadside rest area system is a safety component of the highway system providing

roadside areas where travelers can safely stop, rest and manage their travel needs. Planned with consideration of alternative stopping opportunities such as truck stops, commercial services, and vista points, the rest area system provides public stopping opportunities where they are most needed, usually between large towns and at entrances to major metropolitan areas. Within the safety roadside rest system, individual rest areas may include vehicle parking, picnic tables, sanitary facilities, telephones, water, tourist information panels, traveler service information facilities and vending machines. See Topic 903.

- (8) *Vista Point.* A Vista Point is a paved area beyond the shoulder that permits travelers to safely exist the highway to stop and view a scenic area. In addition to parking areas, amenities such as trash receptacles, interpretive displays, and in some cases, rest rooms, drinking water and telephones may be provided. See Topic 904.

## 62.6 Right of Way

- (1) *Acquisition.* The process of obtaining right of way.
- (2) *Air Rights.* The property rights for the control or specific use of a designated airspace involving a highway.
- (3) *Appraisal.* An expert opinion of the market value of property including damages and special benefits, if any, as of a specified date, resulting from an analysis of facts.
- (4) *Condemnation.* The process by which property is acquired for public purposes through legal proceedings under power of eminent domain.
- (5) *Control of Access.* The condition where the right of owners or occupants of abutting land or other persons to access in connection with a highway is fully or partially controlled by public authority.
- (6) *Easement.* A right to use or control the property of another for designated purposes.
- (7) *Eminent Domain.* The power to take private property for public use without the owner's consent upon payment of just compensation.

- (8) *Encroachment.* Any structure or object of any kind or character which is within the right of way, but not a part of the State facility.
- (9) *Inverse Condemnation.* The legal process which may be initiated by a property owner to compel the payment of just compensation where the property has been taken or damaged for a public purpose.
- (10) *Negotiation.* The process by which property is sought to be acquired for project purposes through mutual agreement upon the terms for transfer of such property.
- (11) *Partial Acquisition.* The acquisition of a portion of a parcel of property.
- (12) *Relinquishment.* A transfer of the State's right, title, and interest in and to a highway, or portion thereof, to a city or county.
- (13) *Right of Access.* The right of an abutting land owner for entrance to or exit from a public road.
- (14) *Severance Damages.* Loss in value of the remainder of a parcel which may result from a partial taking of real property and/or from the project.
- (15) *Vacation.* The reversion of title to the owner of the underlying fee where an easement for highway purposes is no longer needed.

## 62.7 Pavement

The following list of definitions includes terminologies that are commonly used in California as well as selected terms from the "AASHTO Guide for the Design of Pavement Structures" which may be used by FHWA, local agencies, consultants, etc. in pavement engineering reports and research publications.

- (1) *Asphalt Concrete.* See Hot Mix Asphalt (HMA).
- (2) *Asphalt Rubber.* A blend of asphalt binder, reclaimed tire rubber, and certain additives in which the rubber component is at least 15

percent by weight of the total blend and has reacted in the hot asphalt binder sufficiently to cause swelling of the rubber particles.

- (3) *Asphalt Treated Permeable Base (ATPB)*. A highly permeable open-graded mixture of crushed coarse aggregate and asphalt binder placed as the base layer to assure adequate drainage of the structural section, as well as structural support.
- (4) *Base*. A layer of selected, processed, and/or treated aggregate material that is placed immediately below the surface course. It provides additional load distribution and contributes to drainage and frost resistance.
- (5) *Base/Soil/Material*. See Subgrade.
- (6) *Borrow*. Natural soil obtained from sources outside the roadway prism to make up a deficiency in excavation quantities.
- (7) *California R-Value*. A measure of resistance to deformation of the soils under saturated conditions and traffic loading as determined by the stabilometer test (CM301). The California R-value, also referred to as R-value, measures the supporting strength of the subgrade and subsequent layers used in the pavement structure. For additional information, see Topic 614.
- (8) *Capital Preventive Maintenance*. Typically, Capital Preventive Maintenance (CAPM) consists of work performed to preserve the existing pavement structure utilizing strategies that preserve or extend pavement service life. The CAPM program is divided into pavement preservation and pavement rehabilitation. For further discussion see Topic 603.
- (9) *Cement Treated Permeable Base (CTPB)*. A highly permeable open-graded mixture of coarse aggregate, portland cement, and water placed as the base layer to provide adequate drainage of the structural section, as well as structural support.
- (10) *Composite Pavement*. These are pavements comprised of both rigid and flexible layers. Currently, for purposes of the procedures in this manual, only flexible over rigid composite pavements are considered composite pavements.
- (11) *Crack*. Separation of the pavement due to thermal and moisture variations, consolidation, traffic action, or reflections from an underlying pavement.
- (12) *Crack and Seat Overlay (CSO)*. A rehabilitation strategy for rigid pavements. CSO practice requires the contractor to crack and seat the rigid pavement slabs, and place a flexible overlay with a pavement reinforcing fabric (PRF) interlayer.
- (13) *Crumb Rubber Modifier (CRM)*. Scrap rubber produced from scrap tire rubber and other components, if required, and processed for use in wet or dry process modification of asphalt paving.
- (14) *Deflection*. The downward vertical movement of a pavement surface due to the application of a load to the surface.
- (15) *Dense Graded Asphalt Concrete (DGAC)*. See Hot Mix Asphalt (HMA).
- (16) *Depression*. Localized low areas of limited size that may or may not be accompanied by cracking.
- (17) *Dowel Bar*. A load transfer device in a rigid slab usually consisting of a plain round steel bar.
- (18) *Edge Drain System*. A drainage system, consisting of a slotted plastic collector pipe encapsulated in treated permeable material and a filter fabric barrier, with unslotted plastic pipe vents, outlets, and cleanouts, designed to drain both rigid and flexible pavement structures.
- (19) *Embankment*. A prism of earth that is constructed from excavated or borrowed natural soil and/or rock, extending from original ground to the grading plane, and designed to provide a stable support for the pavement structure.
- (20) *Equivalent Single Axle Loads (ESAL's)*. Summation of equivalent 80 kN single axle loads used to convert mixed traffic volume to

total accumulated traffic loading during the design life of the pavement.

- (21) *Flexible Pavement*. Pavements engineered to transmit and distribute traffic loads to the underlying layers. The highest quality layer is the surface course (generally asphalt binder mixes) which may or may not incorporate underlying layers of a base and a subbase. These types of pavements are called "flexible" because the total pavement structure bends or flexes to accommodate deflection bending under traffic loads. For further discussion, see Chapter 630.
- (22) *Grading Plane*. The surface of the basement material upon which the lowest layer of subbase, base, pavement surfacing, or other specified layer, is placed.
- (23) *Gravel Factor ( $G_f$ )*. Refers to the relative strength of a given material compared to a standard gravel subbase material. The cohesiometer values were used to establish the  $G_f$  currently used by Caltrans.
- (24) *Hot Mix Asphalt (HMA)*. Formerly known as asphalt concrete (AC), HMA is a graded asphalt concrete mixture (aggregate and asphalt binder) containing a small percentage of voids which is used primarily as a surface course to provide the structural strength needed to distribute loads to underlying layers of the pavement structure.
- (25) *Hot Recycled Asphalt (HRA)*. The use of reclaimed flexible pavement which is combined with virgin aggregates, asphalt, and sometimes rejuvenating agents at a central hot-mix plant and placed in the pavement structure in lieu of using all new materials.
- (26) *Joint Seals*. Pourable, extrudable or premolded materials that are placed primarily in transverse and longitudinal joints in concrete pavement to deter the entry of water and incompressible materials (such as sand that is broadcast in freeze-thaw areas to improve skid resistance).
- (27) *Lean Concrete Base*. Mixture of aggregate, portland cement, water, and optional

admixtures, primarily used as a base for portland cement concrete pavement.

- (28) *Longitudinal Joint*. A joint normally placed between traffic lanes in rigid pavements to control longitudinal cracking; and the joint between the traveled way and the shoulder.
- (29) *Maintenance*. The preservation of the entire roadway, including pavement structure, shoulders, roadsides, structures, and such traffic control devices as are necessary for its safe and efficient utilization.
- (30) *Open Graded Asphalt Concrete (OGAC)*. See Open Graded Friction Course (OGFC).
- (31) *Open Graded Friction Course (OGFC)*. Formerly known as open graded asphalt concrete (OGAC), OGFC is a wearing course mix consisting of asphalt binder and aggregate with relatively uniform grading and little or no fine aggregate and mineral filler. OGFC is designed to have a large number of void spaces in the compacted mix as compared to hot mix asphalt. For further discussion, see Topic 631.
- (32) *Overlay*. An overlay is a layer, usually hot mix asphalt, placed on existing flexible or rigid pavement to restore ride quality, to increase structural strength (load carrying capacity), and to extend the service life.
- (33) *Pavement*. The planned, engineered system of layers of specified materials (typically consisting of surface course, base, and subbase) placed over the subgrade soil to support the cumulative traffic loading anticipated during the design life of the pavement. The pavement is also referred to as the pavement structure and has been referred to as pavement structural section.
- (34) *Pavement Design Life*. Also referred to as performance period, pavement design life is the period of time that a newly constructed or rehabilitated pavement is engineered to perform before reaching its terminal serviceability or a condition that requires major rehabilitation or reconstruction. The selected pavement design life varies depending on the characteristics of the



highway facility, the objective of the project, and projected traffic volume and loading.

- (35) *Pavement Drainage System.* A drainage system used for both asphalt and rigid pavements consisting of a treated permeable base layer and a collector system which includes a slotted plastic pipe encapsulated in treated permeable material and a filter fabric barrier with unslotted plastic pipe as vents, outlets and cleanouts to rapidly drain the pavement structure. For further discussion, see Chapter 650.
- (36) *Pavement Preservation.* Work done, either by contract or by State forces to preserve the ride quality, safety characteristics, functional serviceability and structural integrity of roadway facilities on the State highway system. For further discussion, see Topic 603.
- (37) *Pavement Service Life.* Is the actual period of time that a newly constructed or rehabilitated pavement structure performs satisfactorily before reaching its terminal serviceability or a condition that requires major rehabilitation or reconstruction. Because of the many independent variables involved, pavement service life may be considerably longer or shorter than the design life of the pavement. For further discussion, see Topic 612.
- (38) *Pavement Structure.* See Pavement.
- (39) *Pumping.* The ejection of foundation material, either wet or dry, through joints or cracks, or along edges of rigid slabs resulting from vertical movements of the slab under traffic. This phenomena is especially pronounced with saturated structural sections.
- (40) *Raveling.* Progressive disintegration of the surface course on asphalt concrete pavement by the dislodgement of aggregate particles and binder.
- (41) *Rehabilitation.* Work undertaken to extend the service life of an existing facility. This includes placement of additional surfacing and/or other work necessary to return an existing roadway, including shoulders, to a condition of structural or functional adequacy, for the specified service life. This might include the partial or complete removal and replacement of portions of the pavement structure. Rehabilitation is divided into pavement rehabilitation activities and roadway rehabilitation activities (see Indexes 603.3 and 603.4).
- (42) *Resurfacing.* A supplemental surface layer or replacement layer placed on an existing pavement to restore its riding qualities and/or to increase its structural (load carrying) strength.
- (43) *Rigid Pavement.* These are pavements with a rigid surface course (typically Portland cement concrete or a variety of specialty cement mixes for rapid strength concretes) which may incorporate underlying layers of stabilized or unstabilized base or subbase materials. These types of pavements rely on the substantially higher stiffness rigid slab to distribute the traffic loads over a relatively wide area of underlying layers and the subgrade. Some rigid slabs have reinforcing steel to help resist cracking due to temperature changes and repeated loading.
- (44) *Roadbed.* The roadbed is that area between the intersection of the upper surface of the roadway and the side slopes or curb lines. The roadbed rises in elevation as each increment or layer of subbase, base or surface course is placed. Where the medians are so wide as to include areas of undisturbed land, a divided highway is considered as including two separate roadbeds.
- (45) *Rubberized Asphalt Binder.* A blend of asphalt binder modified with crumb rubber modifier (CRM) that may include less than 15 percent CRM by mass.
- (46) *Rubberized Asphalt Concrete (RAC).* A material produced for hot mix applications by mixing either asphalt rubber or rubberized asphalt binder with graded aggregate. RAC may be dense- (RAC-D), gap- (RAC-G), or open- (RAC-O) graded.
- (47) *R-value.* See California R-Value.

- (48) *Serviceability.* The ability at time of observation of a pavement to serve traffic (automobiles and trucks) which use the facility. The primary measure of serviceability is the Present Serviceability Index (PSI), which ranges from 0 (impossible road) to 5 (perfect road).
- (49) *Settlement.* Localized vertical displacement of the pavement structure due to slippage or consolidation of the underlying foundation, often resulting in pavement deterioration, cracking and poor ride quality.
- (50) *Structural Section.* See Pavement Structure.
- (51) *Structural Section Drainage System.* See Pavement Drainage System.
- (52) *Subbase.* Unbound aggregate or granular material that is placed on the subgrade as a foundation or working platform for the base. It functions primarily as structural support, but it can also minimize the intrusion of fines from the subgrade into the pavement structure, improve drainage, and minimize frost action damage.
- (53) *Subgrade.* Also referred to as basement soil, is that portion of the roadbed consisting of native or treated soil on which pavement surface course, base, subbase, or a layer of any other material is placed.
- (54) *Surface Course.* One or more uppermost layers of the pavement structure engineered to carry and distribute traffic loads. The surface course typically consists of a weather-resistant flexible or rigid layer, which provides characteristics such as friction, smoothness, resistance to traffic loads, and drainage. In addition, the surface course minimizes infiltration of surface water into the underlying base, subbase and subgrade. Surface course may be composed of a single layer with one or multiple lifts, or multiple layers of differing materials.
- (55) *Tie Bars.* Deformed reinforcing bars placed at intervals that hold rigid pavement slabs in adjoining lanes and exterior lane-to-shoulder joints together and prevent differential vertical and lateral movement.

## 62.8 Traffic

- (1) *Annual Average Daily Traffic.* The average 24 hour volume, being the total number during a stated period divided by the number of days in that period. Unless otherwise stated, the period is a year. The term is commonly abbreviated as ADT or AADT.
- (2) *Delay.* The time lost while traffic is impeded by some element over which the driver has no control.
- (3) *Density.* The number of vehicles per kilometer on the traveled way at a given instant.
- (4) *Design Vehicles.* See Topic 404.
- (5) *Design Volume.* A volume determined for use in design, representing traffic expected to use the highway. Unless otherwise stated, it is an hourly volume.
- (6) *Diverging.* The dividing of a single stream of traffic into separate streams.
- (7) *Headway.* The time in seconds between consecutive vehicles moving past a point in a given lane, measured front to front.
- (8) *Level of Service.* A rating using qualitative measures that characterize operational conditions within a traffic stream and their perception by motorists and passengers.
- (9) *Merging.* The converging of separate streams of traffic into a single stream.
- (10) *Running Time.* The time the vehicle is in motion.
- (11) *Spacing.* The distance between consecutive vehicles in a given lane, measured front to front.
- (12) *Speed.*
  - (a) Design Speed--A speed selected to establish specific minimum geometric design elements for a particular section of highway.
  - (b) Running Speed--The speed over a specified section of highway, being the distance divided by running time. The average for all traffic, or component thereof, is

the summation of distances divided by the summation of running times.

*(13) Traffic Control Devices.*

- (a) Markings--All pavement and curb markings, object markers, delineators, colored pavements, barricades, channelizing devices, and islands used to convey regulations, guidance, or warning to road users.
- (b) Sign--Any traffic control device that is intended to communicate specific information to road users through a word or symbol. Signs do not include traffic control signals or markings.
- (c) Traffic Signal--A power-operated control device by which traffic is warned or directed to take a specific action. These devices do not include signals at toll plazas, power-operated signs, illuminated permanent markers, warning lights, or steady burning electric lamps.

*(14) Volume.* The number of vehicles passing a given point during a specified period of time.

*(15) Weaving.* The crossing of traffic streams moving in the same general direction accomplished by merging and diverging.

*(16) Ramp Metering.* A traffic management strategy which utilizes a system of traffic signals on freeway entrance and connector ramps to regulate the volume of traffic entering a freeway corridor in order to maximize the efficiency of the freeway and thereby minimize the total delay in the transportation corridor.

## 62.9 Drainage

See Chapter 800 for definition of drainage terms.